

## REMARKS

Claims 1 through 76 are pending in the present application. In response to a Restriction Requirement dated June 9, 2004, applicants elected claims 1 through 38 for prosecution on the merits. In the Office Action dated October 1, 2004, the Examiner rejected claims 1, 3, 6-8, 13, 27, 33 and 36-37 under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,468,099 to Wheatley, *et al.* ("Wheatley"). The Examiner further rejected claims 2, 4-5, 14, 18-26, 34-35 and 38 under 35 U.S.C. §103(a) as unpatentable over the Wheatley reference. The Examiner also rejected claims 9-12, 15-17 and 29-32 under 35 U.S.C. §103(a) as unpatentable over the Wheatley reference in view of Examiner's Official Notice that the concept and advantages of using a threshold comparator circuits in apparatus utilizing sensors and microprocessors is well known. Finally, claim 28 is rejected under 35 U.S.C. §103(a) as unpatentable over the Wheatley reference in view of U.S. Patent No. 6,550,129 to Buttrick ("Buttrick").

The disclosed embodiments of the invention will now be discussed in comparison to the prior art. It is understood, however, that the discussion of the disclosed embodiments, as well as the discussion of the differences between the disclosed embodiments of the present invention and the prior art do not define the scope or interpretation of any of the claims. Instead, such discussed differences, when presented, are offered merely to help the Examiner appreciate important claim distinctions as they are discussed.

The various disclosed embodiments of the present invention provide an apparatus and methods for manufacturing operations using non-contact positional sensing. In a particular embodiment of the invention, and with reference to Figure 2 of the present application, a manufacturing apparatus 100 includes a track assembly 110 structured to support a carriage assembly 120 that supports a wide variety of manufacturing tools. The track assembly 110 further includes "a pair of flexible rails 22, 24" (page 5, line 14) that allows the track assembly to conform to a contoured surface of the workpiece, as further described, *inter-alia*, at page 6, lines 6-8.

The Examiner has cited the Wheetley reference as pertinent to patentability of claims in the present application. Wheetley discloses a seam tracking robotic drilling machine operable to move a drilling head along a seam. Specifically, and with reference now to Figure 1 of Wheetley, the Examiner urges a correspondence between the support frame 20 and the track assembly 110 disclosed in the present application. The support frame 20 is a circular, rigid assembly configured to support a drill head 74 above abutting surface panels 14 and 16. The support frame 20 does not include a pair of laterally opposed and flexible rails that extend longitudinally along the workpiece that permits the support frame 20 to flexibly conform to a contoured portion of the workpiece. Applicants further note that if the support frame 20 of the disclosed invention was structured so that the support frame 20 flexed, the carriage 48 would be unable to translate along the rails 44, as desired. Therefore, applicants respectfully assert that the Wheetley reference fails to disclose laterally opposed and flexible rails, and that if the support frame 20 was substantially flexible, the flexibility would render the disclosed machine unsuited for its intended purpose.

The Examiner further asserts that the embodiments of the present invention are obvious in view of the disclosure in Wheetley. In particular, the Examiner states that Wheetley substantially teaches the embodiments of the present invention, except that Wheetley does not disclose sensor elements that are fiber optical elements. In view of the foregoing arguments regarding applicant's disclosed track assembly, applicants respectfully assert that the embodiments of the present invention are, in fact, distinguishable from the apparatus taught in Wheetley, without regard to the type of sensor element employed.

The Examiner has also asserted that the embodiments of the present invention are obvious in view of the disclosure in Wheetley, and further in view of Examiner's Official Notice regarding threshold comparator circuits in sensor circuits. Applicants respectfully submit that the Examiner's use of Official Notice in the present situation is improper. As set forth in the MPEP, section 2144.03, the Examiner may take Official Notice of facts outside of the record that

are capable of instant and unquestionable demonstration as being “well known” in the art. In the present case, the particular sensing circuit for performing a positional determination apparatus, in combination with the particular track assembly are not capable of instant and unquestionable demonstration as being well known in the art, precisely because the particular combination of elements is the inventive contribution of the applicants. The MPEP also states that no documentary proof for Official Notice is needed in cases where such knowledge is of “notorious character.” There is no such notorious character regarding the particular combination of elements as presently disclosed.

The foregoing section of the MPEP further requires that assertions of technical facts in areas of esoteric technology must always be supported by citation of some reference. If the Examiner believes the technical field of this application is not esoteric, then in the absence of citing technical references, 37 C.F.R. 1.104(d)(2) provides that the applicants are entitled to obtain an affidavit from the Examiner providing data that is “as specific as possible” in support of a reference made (here, the reference is one of “Official Notice”). The rule further provides that the applicants are entitled to contradict such an affidavit or provide further explanation in response.

The Examiner has also cited the Buttrick reference in combination with the Wheatley reference as pertinent to the patentability of claims in the present application. In particular, Buttrick is cited for disclosing a programmable CNC system for performing specified operations on a workpiece. Applicants respectfully assert that prior arguments regarding the structure of the disclosed track assembly properly distinguish over the Wheatley reference, and that the Buttrick reference does not provide the teaching missing from the Wheatley reference.

Turning now to the claims, differences between the claim language and the applied art will be specifically pointed out. Claim 1, as amended, recites in pertinent part: “An apparatus for performing a manufacturing operation on a workpiece...comprising...a track assembly adapted to be attached to the workpiece, *wherein the track assembly includes a pair of laterally opposed*

*and longitudinally extending rails configured to flexibly conform to a contoured portion of the workpiece...*” (Emphasis added). The Wheetley reference does not disclose this. Instead, Wheetley discloses a rigid, circular-shaped support structure not capable of flexibly conforming to a contoured portion of the workpiece. Claim 1 is now therefore allowable over the cited reference. Claims depending from claim 1 are also allowable based upon the allowability of the base claim and further in view of the additional limitations recited in the dependent claims.

Claim 14, as amended, recites in pertinent part: “An apparatus for performing a manufacturing operation on a workpiece...comprising...a track assembly adapted to be attached to the workpiece, *wherein the track assembly includes a pair of laterally opposed and longitudinally extending rails configured to flexibly conform to a contoured portion of the workpiece...*” (Emphasis added). Again, Wheetley does not disclose or suggest this in any motivated fashion. Accordingly, claim 14 is also allowable over the cited reference. Claims depending from claim 14 are also allowable based upon the allowability of the base claim and further in view of the additional limitations recited in the dependent claims.

Finally, claim 27, as amended, recites in pertinent part: “An apparatus for performing a manufacturing operation on a workpiece...comprising...a track assembly adapted to be attached to the workpiece, *wherein the track assembly includes a pair of laterally opposed and longitudinally extending rails configured to flexibly conform to a contoured portion of the workpiece...*” (Emphasis added). As described in more detail above, Wheetley does not disclose or suggest this. Claim 27 is therefore allowable over the cited art. Claims depending from claim 27 are also allowable based upon the allowability of the base claim and further in view of the additional limitations recited in the dependent claims.

Applicants have also amended various portions of the specification to correct various discrepancies between the specification and the figures. No new matter has been introduced.

All claims are now therefore in allowable form. A Notice of Allowance is earnestly solicited.

Respectfully submitted,

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**MAIL CERTIFICATE**

I hereby certify that this communication is being deposited with the United States Postal Service via first class mail under 37 C.F.R. § 1.08 on the date indicated below addressed to: MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

January 19, 2005  
Date of Deposit

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